



September 10, 2020

Kimberly D. Bose, Secretary  
Federal Energy Regulatory Commission  
888 First Street, N.E.  
Washington, D.C. 20426

Preliminary Permit Application for the Maysville Pumped Storage Project

Dear Ms. Bose,

Maysville PSH, LLC is pleased to submit the following application for preliminary permit for the Maysville Pumped Storage Project. If you have any questions or need additional information, please contact me at (415) 602-2569 or [lresta@rplusenergies.com](mailto:lresta@rplusenergies.com).

Sincerely,

/s/ Luigi Resta

Luigi Resta  
President, rPlus Energies, LLC  
For Maysville PSH, LLC

Application for Preliminary Permit  
for the  
Maysville Pumped Storage Project

September 10, 2020

Maysville PSH, LLC

**VERIFICATION STATEMENT**

This application for a preliminary permit is executed in the

State of Utah

County of Salt Lake

by: Luigi Resta  
Maysville PSH, LLC  
201 S. Main St., Ste. 2000  
Salt Lake City, UT 84111

being duly sworn, depose(s) and say(s) that the contents of this Preliminary Permit Application are true to the best of (his or her) knowledge or belief. The undersigned Applicant has signed the application this 29th day of June, 2020.

Applicant

By: Luigi Resta

Subscribed and sworn to before me, a Notary Public of the State of Utah, this 1 day of July, 2020.



(Notary Public, or other authorized official)



**PRELIMINARY PERMIT APPLICATION  
FOR THE  
MAYSVILLE PUMPED STORAGE PROJECT**

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**§4.81 (a) Initial Statement**

(1) Maysville PSH, LLC, a Utah limited liability company ("Applicant") applies to the Federal Energy Regulatory Commission ("FERC") for a preliminary permit for the proposed Maysville Pumped Storage Project ("Project"), as described in the attached exhibits. This application is made in order that the Applicant may secure and maintain priority of application for a license for this Project under Part I of the Federal Power Act while obtaining the data and performing the acts required to determine the feasibility of the Project and to support an application for a license.

(2) The location of the proposed project is:

State or Territory:	Kentucky
County:	Mason
Township or nearby town:	Maysville, KY
Stream or other body of water:	None (closed-loop)

(3) The exact name, business address, and telephone number of the Applicant is:

Maysville PSH, LLC  
201 S. Main St., Ste. 2000  
Salt Lake City, UT 84111  
Phone: (415) 602-2569

The exact name and business address of each person authorized to act as an agent for the Applicant in this application is:

Luigi Resta  
Maysville PSH, LLC  
201 S. Main St., Ste. 2000  
Salt Lake City, UT 84111  
Phone: (415) 602-2569  
lresta@rplusenergies.com

(4) Maysville PSH, LLC is a domestic corporation and is not claiming preference under section 7(a) of the Federal Power Act.

(5) The proposed term of the requested permit is 48 months.

(6) No existing dams are associated with the project.

**§4.32. IDENTIFICATION**

*(1). For a preliminary permit or license, identify every person, citizen, association of citizens, domestic corporation, municipality, or state that has or intends to obtain and will maintain any proprietary right necessary to construct, operate, or maintain the project;*

Maysville PSH, LLC  
201 S. Main St., Ste. 2000  
Salt Lake City, UT 84111

*(2)(i). Every county in which any part of the project, and any Federal facilities that would be used by the project, would be located:*

The Project will be located primarily in Mason County, Kentucky and partially in Adams County, Ohio.

Mason County  
County Clerk/Recorder  
221 Stanley Reed Court St.  
Maysville, KY 41056

Adams County  
County Clerk/Recorder  
110 West Main St.  
West Union, OH 45693

*(2)(ii). Every city, town, or similar local political subdivision:*

*(A) In which any part of the project, and any Federal facilities that would be used by the project, would be located:*

The Project will not be located within the boundaries of any city, town, or similar local subdivision.

*(B) Cities, towns, or similar subdivision (5,000 people or more) within a 15-mile radius of the project dam:*

City of Maysville  
216 Bridge St.  
Maysville, KY 41056

*(iii) Every irrigation district, drainage district, or similar special purpose political subdivision:*

*(A) In which any part of the project, and any Federal facilities that would be used by the project, would be located; or*

*(B) That owns, operates, maintains, or uses any project facilities or any Federal facilities that would be used by the project;*

N/A

*(iv) Every other political subdivision in the general area of the project that there is reason to believe would likely be interested in, or affected by, the application:*

Kentucky State Board on Electric Generation and Transmission Siting  
211 Sower Boulevard  
P.O. Box 615  
Frankfort, KY 40602-0615

Kentucky Department of Environmental Protection  
300 Fair Oaks Ln.  
Frankfort, KY 40601

Kentucky Department of Fish and Wildlife Resources  
1 Sportsman's Lane  
Frankfort, KY 40601

Ohio Power Siting Board  
180 East Broad St.  
Columbus, OH 43215

*(v) All Indian tribes that may be affected by the project.*

Absentee-Shawnee Tribe of Indians of Oklahoma  
2025 S. Gordon Cooper Drive  
Shawnee, OK 74801

Eastern Shawnee Tribe of Oklahoma  
P.O. Box 350  
Seneca, MO 64865

Shawnee Tribe  
P.O. Box 189  
Miami, OK 74355

Eastern Band of Cherokee Indians  
P.O. Box 455  
Cherokee, NC 28719

Cherokee Nation  
PO Box 948  
Tahlequah, OK 74465

United Keetoowah Ban of Cherokee Indians  
P.O. Box 189  
Parkhill, OK 74451



#### § 4.81 (b) Exhibits

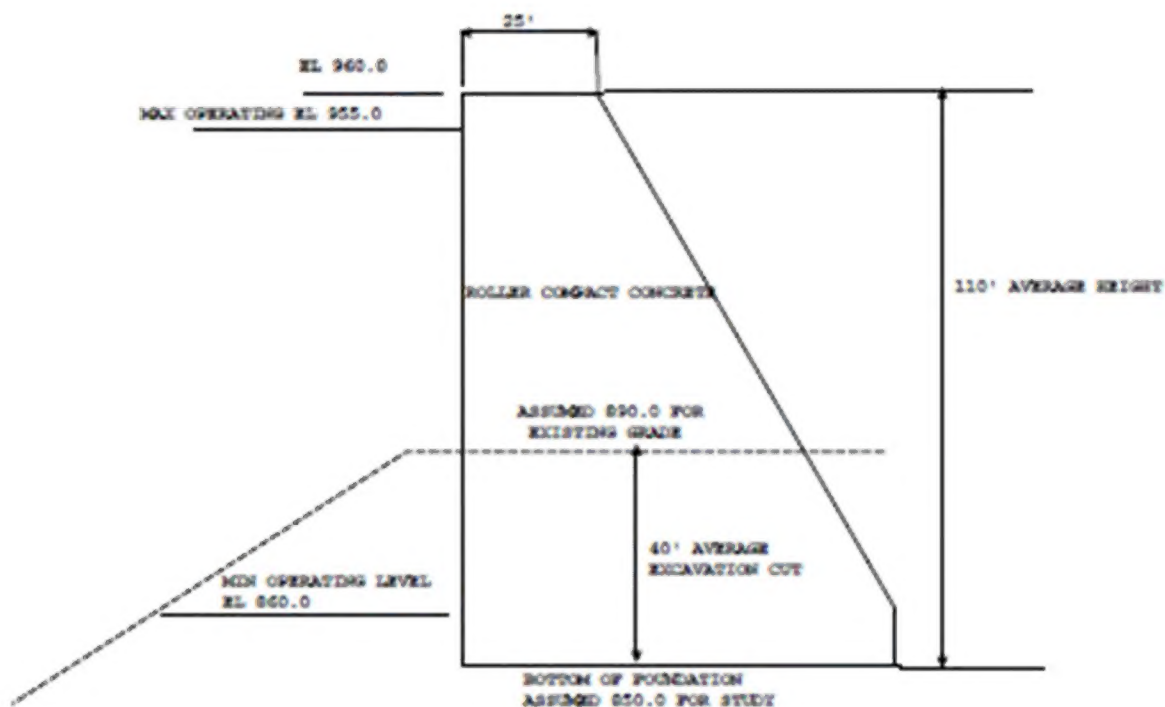
##### EXHIBIT 1: DESCRIPTION OF THE PROPOSED PROJECT

The Maysville Pumped Storage Project is a closed-loop, underground pumped storage project that will consist of a new artificial upper reservoir, created by the construction of a ring-type dam, utilized in conjunction with a new lower reservoir that would be created within excavated underground mine space. Details on conduits, including headrace tunnel from the upper reservoir to the powerhouse, penstocks, and tailrace tunnel between powerhouse and lower reservoir are provided below.

Equipment would tentatively consist of three 167 MW reversible pump-turbines, totaling 500 MW of generating capacity. Annual energy production is expected to be approximately 876,000 megawatt-hours (MWh). The planned point of interconnection would be a 345 kV bus at the former Stuart Generating Station in Adams County, Ohio, to which the project would connect via a new 2.8-mile 230 kV line.

##### Dams

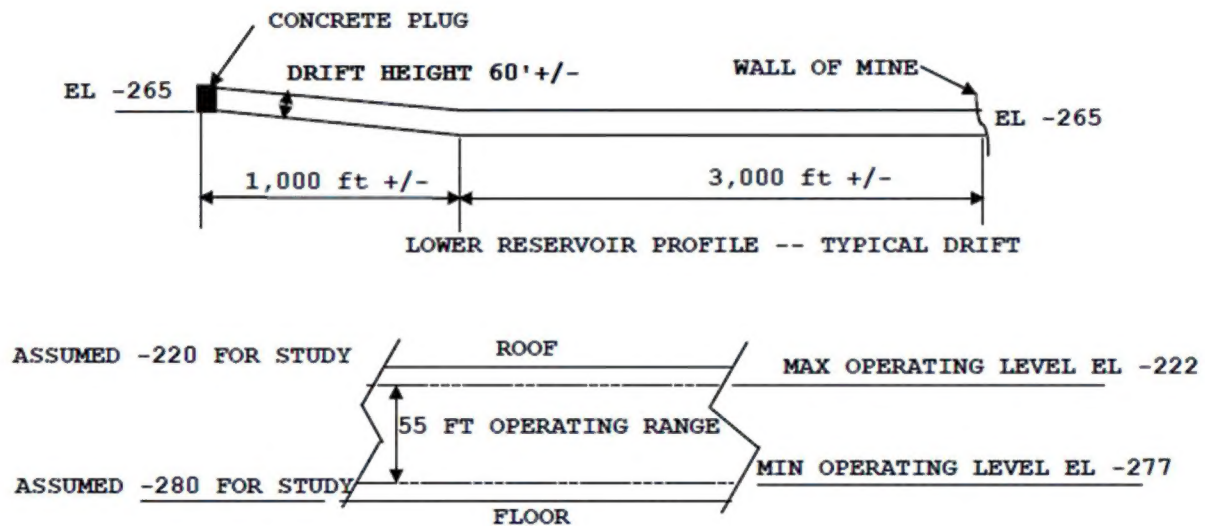
	Height (ft)	Length at Crest (ft)	Type
Upper Reservoir Ring Dam 38.615, -83.682	110	7,400	Roller-Compacted Concrete



*Reservoirs*

	MSL (ft)	Volume (AF)	Surface Area (ac)
Upper Reservoir 38.615, -83.682	955	5,625	65
Lower Reservoir (Excavated Mine) 38.618, -83.678	-220	5,556	120

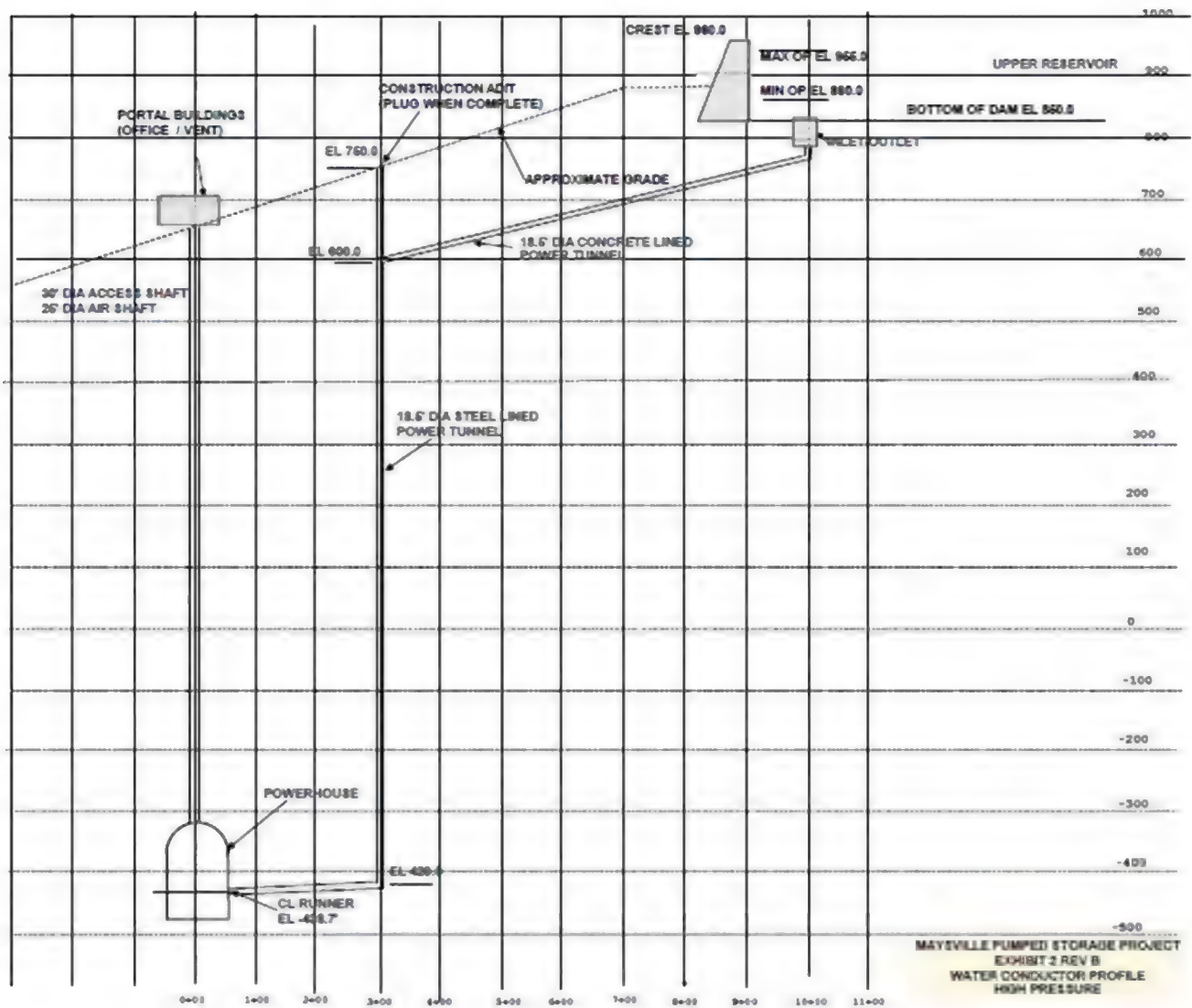
The Lower Reservoir would be formed by sectioning off a portion of the existing limestone mine with 60 concrete plugs, each tentatively 60 feet high, 60 feet wide, and 6 feet thick. The mine level where the Lower Reservoir will be constructed consists of approximately 60 feet tall and 50 feet wide open drifts that average 4,000 feet long. Each drift has a total volume of 253 acre-feet. The floor of the drifts varies in elevation from -284 ft. MSL to -265.0 ft. MSL.



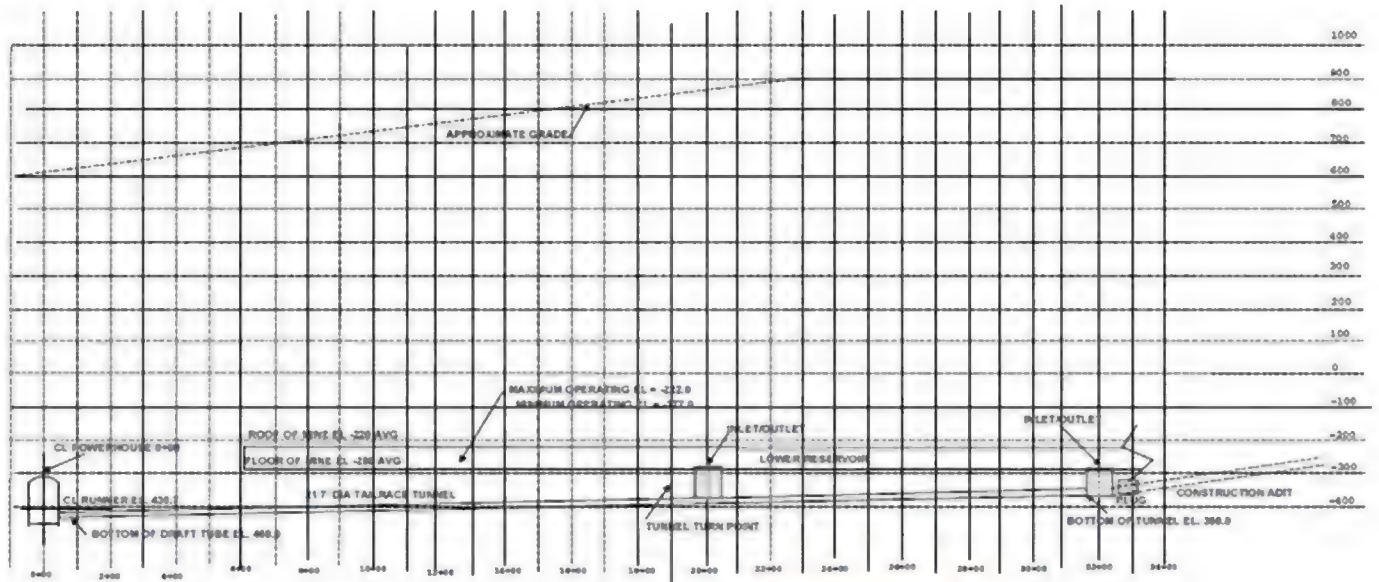
### Water Conduits

	Length (ft)	Diameter (ft)	Composition or Lining
Headrace Tunnel	630	18.5	Concrete-Lined
High Pressure Vertical Shaft	1,020	18.5	Steel-Lined
Penstocks (3)	100	10	Steel
Tailrace	3,200	21.6	Concrete-lined

Tentative layouts of conduits are shown below.



Intake, Headrace, & Vertical Shaft Profile



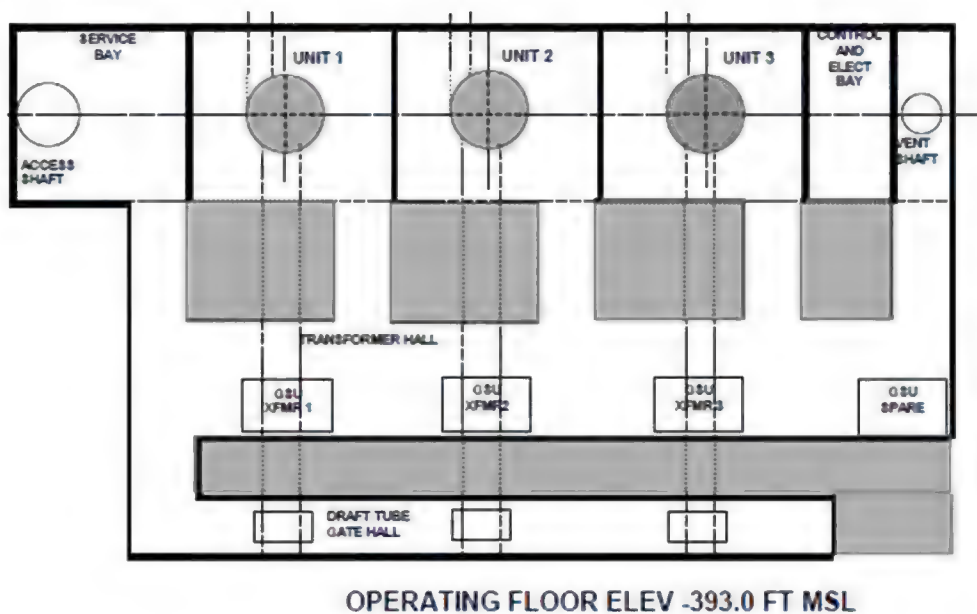
Low-Pressure (Tailrace) Profile

MAYEVILLE PUMPED STORAGE PROJECT  
EXHIBIT 3 REV B  
WATER CONDUCTOR PROFILE  
TAILRACE / LOW PRESSURE

### Powerhouse

The underground powerhouse would be located in a new powerhouse cavern constructed to the west of the existing mine, with tentative operating floor at elevation-393 feet MSL. Tentative dimensions for the powerhouse are 400 feet long by 75 feet wide by 160 feet high. The powerhouse will be constructed out of limestone bedrock and include concrete and steel formwork. Coordinates for the tentative powerhouse locations are as follows: 38.619, -83.689.

Voltage would be stepped up to 230 kV in an adjacent transformer chamber. Tentative dimensions of the transformer chamber at 150 feet long by 75 feet wide by 44 feet high.



OPERATING FLOOR ELEV -393.0 FT MSL

### *Transmission Lines*

The Project will propose to interconnect at the former Stuart Generating Station's substation in Adams County, Ohio, via a new 2.8 mile, 230 kV line. The 230 kV underground transmission line would tentatively be run from the transformer chamber through the existing mine for approximately 1.2 miles, continue to the Ohio side of the Ohio River within a .2 mile tunnel under the river, with tentative diameter of 18 feet, and then running overhead for 1.4 miles. The anticipated surface right-of-way requirement for the transmission line is 120 feet.

### *Water Source*

The Project will tentatively source its initial fill water and subsequent evaporation loss recovery water from existing wells located along the Ohio River, specific locations to be determined within the study period, with rights for use of that water to be leased from existing water rights holders.

### *Operation*

The Project will be operated to provide fast-response firm capacity to the PJM energy market, along with support to new renewable resources being interconnected to the regional transmission grid currently and in the future. These resources—predominantly wind and solar energy—are emissions-free and increase energy security, but are variable and intermittent in nature. The Project will use the dynamic capabilities of pumped storage to aid in the efficient integration of variable and intermittent renewable resources from both an operational and economic standpoint.

### *Federal Lands*

There are no federal lands within the study area.

**§4.81 (c) EXHIBIT 2a: DESCRIPTION OF STUDIES****(1) General****(i) Study Plan**

The Applicant plans to engage in the following studies in order to design the technical aspects of the project and to confirm its economic viability:

- Project land surveys
- Environmental impact studies
- Archaeological studies
- Groundwater studies
- Energy production studies
- Water quality studies
- Water rights studies
- Engineering studies
- Study on the energy market for the project
- Transmission interconnection studies
- Determination of equipment configuration and sizing
- Cost estimates

Additional studies may be required as the need arises.

**(ii) New Roads**

No new roads will be needed for the purpose of conducting the studies described in this exhibit.

**(2) Work Plan for New Dam Construction****(i) Description of field studies, tests, and other land disturbing activities**

A subsurface investigation will be required to determine the rock structure and stability for the proposed upper reservoir and underground features. Samples shall be checked for rock structure as well as determine the suitability for project features for the reservoirs, powerhouse cavern, and tunnels. The Applicant will use existing roads located within the project boundary to minimize or eliminate the potential for any land disturbing activities. The Maysville mine has been worked for decades and significant geotechnical data is already available. Other publicly available geological data will be utilized to the greatest extent possible. Appropriate measures will be taken to restore areas that could potentially be altered or disturbed as a result of these activities. Appropriate measures are expected to include a plan to implement erosion control, backfilling of core borings, augur borings, and test pits, refurbishing of any disturbed vegetation and appropriate disposal of any drill materials.

(ii) Studies Schedule

Work Item	Month Beginning	Month Ending
<b>Engineering</b>		
Conceptual refinement and evaluation of alternatives	0	48
Initial scoping and consultation	0	8
Geological reconnaissance	2	6
<b>Environmental</b>		
Agency consultation	0	48
Cultural resource review	0	12
Environmental resource review	0	12
Prepare Pre-Application Document	8	14
Prepare draft application	24	36
<b>Other</b>		
Land & ROW	0	48
Water rights & sourcing studies	0	48
Transmission interconnection planning	6	36
Cost estimating, economic feasibility, and financial planning investigations	6	48
Power sales marketing	12	48
Additional stage consultation and documentation	20	48

This schedule may be adjusted and supplemented depending on need and contingencies that may develop as studies proceed.

**(3) Request for Waiver**

It is anticipated that preliminary field studies, tests, and other activities to be conducted under the permit would not adversely affect cultural resources or endangered species and would cause only minor alterations or disturbances of lands and waters, and that any land altered or disturbed would be adequately restored. This is particularly true since only an upper reservoir is required to be constructed for this project. The Applicant therefore requests waiver of the full requirements of 18 CFR § 4.81 (c)(2).

**§4.81 (c) EXHIBIT 2b: Statement of Costs and Financing****i. Estimated cost of studies**

The estimated cost of carrying out and preparing the studies, investigations, tests, surveys, maps, plans and specifications described in this application is estimated to be between \$500,000 and \$750,000.

**ii. Expected sources of financing**

The source of financing to conduct the studies described in this application will be private investors.



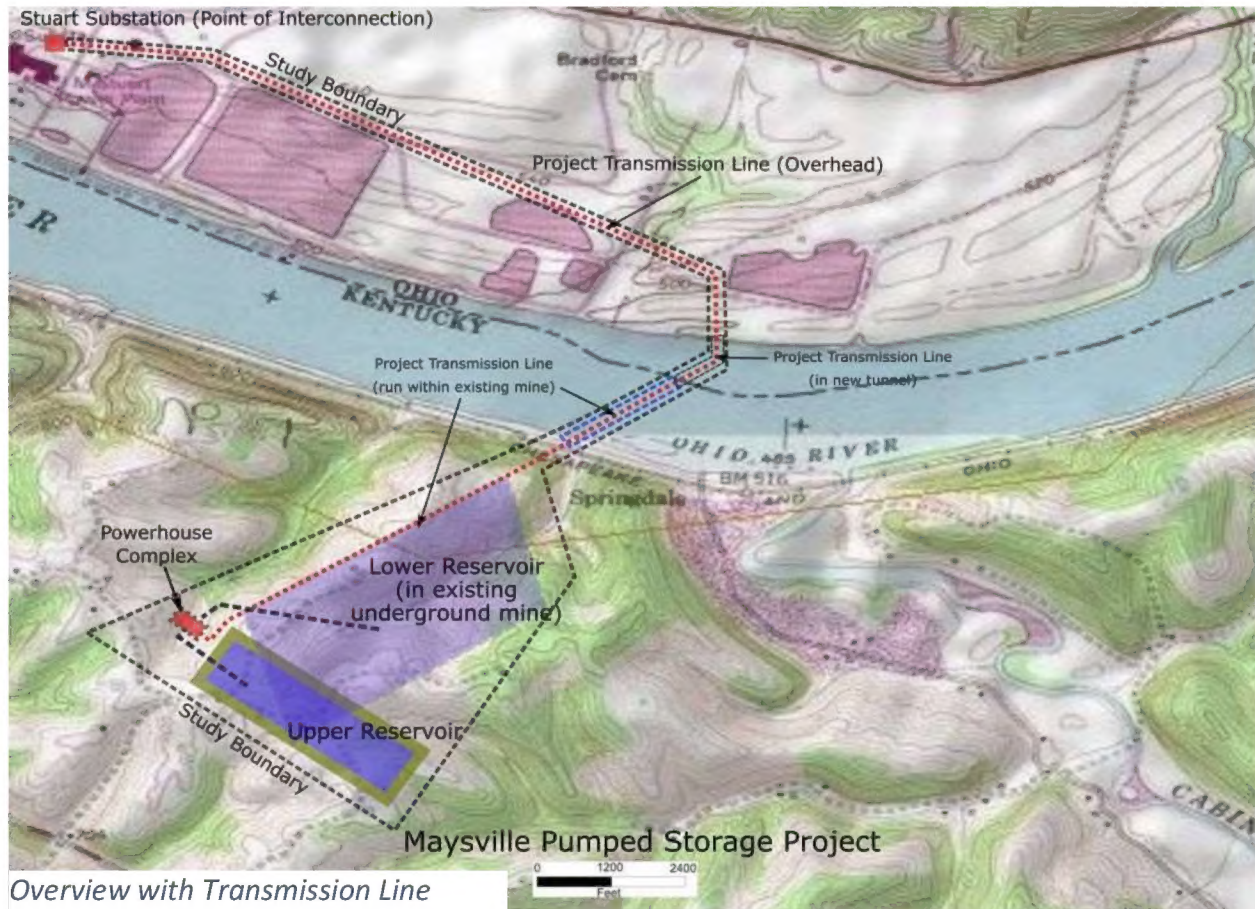
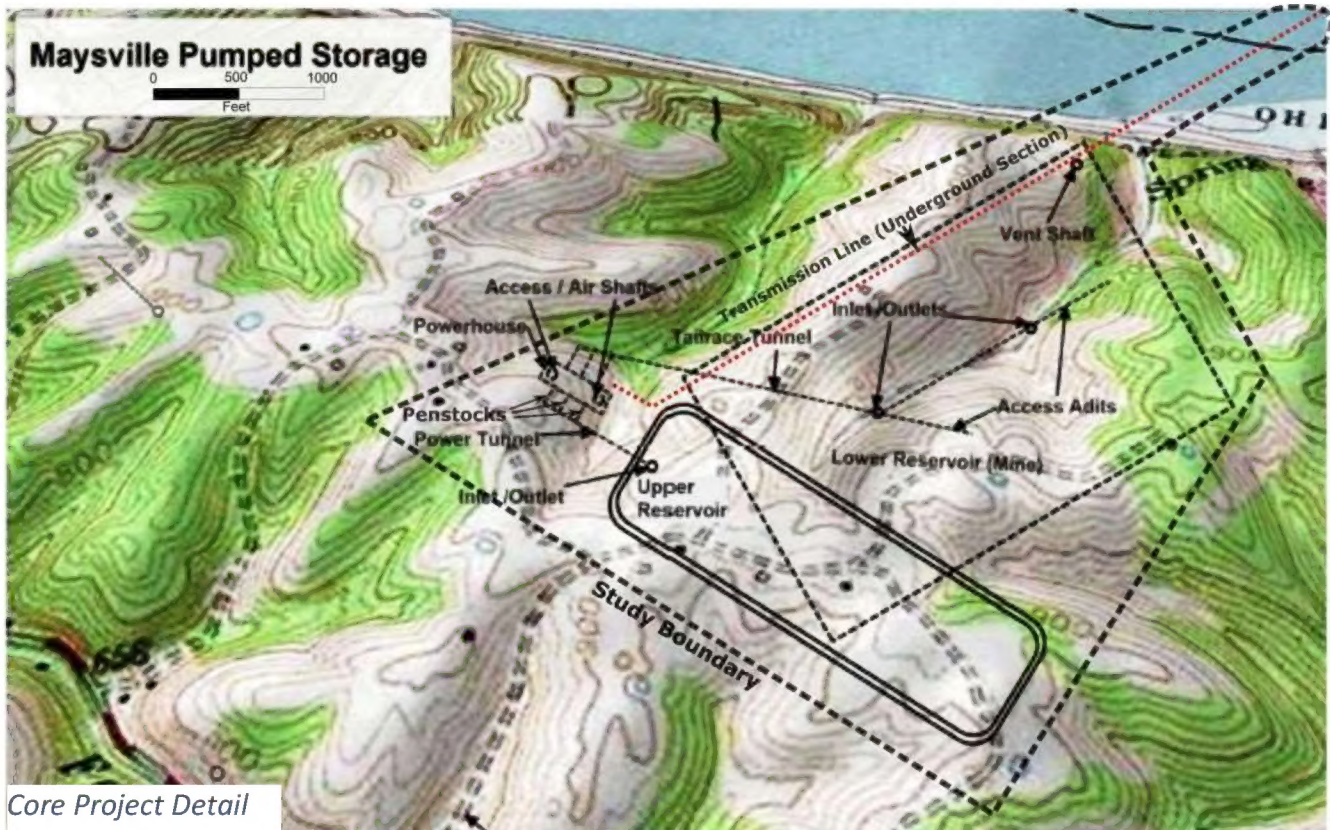
#### §4.81 (d) EXHIBIT 3: PROJECT MAPS

Notes:

1. No areas within the study boundary are designated as wilderness area or wilderness study area, or recommended for designation as wilderness areas.
2. No areas within the study boundary are included in or have been designated for study for inclusion in the National Wild and Scenic Rivers System.







Document Content(s)

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